National Aeronautics and Space Administration
Goddard Space Flight Center

Inside Wallops

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NASA Balloon Makes Record Breaking Flight

Larger than a football field and flying near the edge of space, a NASA scientific balloon has set a new flight record of almost 32 days after completing two orbits around the South Pole.

The record-breaking balloon carried the Trans-Iron Galactic Element Recorder (Tiger) experiment, designed to search for the origin of cosmic rays, atomic particles that travel through the galaxy at near light speeds and shower the Earth constantly.

Photo by E. Christian

A NASA scientific balloon carrying the TIGER experiment is readied for launch from Antarctica.

The balloon was launched from McMurdo Station, Antarctica, at 6:30 a.m. EST on Dec. 20, 2001. It traveled approximately 8,800 miles before landing 31 days 20 hours later at 3:03 a.m. EST, January 21, 284 miles from McMurdo Station. Payload recovery operations are in progress.

The previous endurance record for a long duration balloon flight was in January 2001 from McMurdo. The flight was one orbit of the South Pole that lasted 26 days. The Tiger mission was able to more than double the amount of continuous science observational time over any previous balloon mission.

"We are excited with the duration of this flight which allowed the scientists to get ample science to perform their studies," said Steve Smith, Chief of the Balloon Program Office. "We routinely have long duration balloons that float for up to two weeks, but to have one flight last for over 31 days is very rewarding."

The balloon, used for this Antarctica flight, expanded to a diameter of more than 424 feet and weighed 3,687 pounds. An enormous balloon was needed to hoist the two-ton Tiger experiment to about 125,000 feet. To complete the flight, the experiment and its parachute float to the ground after being separated from the balloon by radio command. Helium was released from the balloon for descent near McMurdo Station.

"The importance of Tiger is that it is the first experiment that has both a sufficient collecting power and adequate resolution to measure abundances of all nuclei from iron through Zirconium," said Tiger Principal Investigator Robert Binns, Washington University, St. Louis. "This will enable us to determine whether the cosmic ray source is hot or cold, gas or solid. We have already seen in our quick-look analysis of flight data that Tiger's resolution is sufficient to resolve those nuclei."

Personnel from the National Scientific Balloon Facility (NSBF), Palestine, Texas, who support approximately 25 NASA balloon flights annually from sites worldwide, conducted the launch, flight, and recovery operations of the Tiger balloon mission. "We are really proud of our crew in Antarctica," said Danny Ball, Site Manager of the Texas facility. "Everyone at NSBF has contributed to this success, but our crew that spent Thanksgiving, Christmas, and New Years on the "Ice" deserves the lion's share of the credit."

Antarctica ground and air support was provided by the National Science Foundation's Office of Polar Programs.

Tiger is a collaboration among Washington University; NASA's Goddard Space Flight Center, Greenbelt, Md.; California Institute of Technology, Pasadena; and the University of Minnesota, Minneapolis. The Wallops Flight Facility manages NASA's Scientific Balloon Program for the Office of Space Science, NASA Headquarters.

Applications for Student Summer Programs Available

Applications and information for two student summer programs — NASA SHARP and the National Space Club Scholars Program — are available in the Public Affairs Office, Room 108, Building F-6. The programs are for high school students interested in careers in science and engineering.

NASA SHARP and the National Space Club Scholars Program are conducted at NASA Wallops Flight Facility and are open to students within the local commuting distance.

The application deadline for the programs is late February.

Wallops Shorts……..

Career Day

Donna Hughes, Shane Whealton and Owen Hooks, EG&G; Jan Jackson, Northrup-Grumman; and Randy Carrier, Orbital Science Corporation participated in Career Day events held at Stephen Decatur Middle School on January 16. Approximately 650, 7th and 8th grade students attended.

Photo by D. Hughes

Randy Carrier, (left) and Shane Whealton talk to Stephen Decatur students.

Space Shuttle Flights to Continue Challenges

On the heels of making space history in 2001 by completing the first phase of the International Space Station (ISS) assembly, the Space Shuttle will continue a string of space firsts during six missions planned for 2002.

The coming year will be marked by the shuttle fleet matriarch Columbia's return to space on the first non-ISS Shuttle flight in more than two years. Flights by Atlantis and Endeavour will haul more than 50 tons of additional components to the ISS and more than three dozen new experiments and two new laboratory racks. Discovery will remain on the ground in 2002 for standard maintenance and inspections.

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(Space Shuttle Continued)

NASA plans to break a record set only last year for the most space walks ever conducted in a single year. From Space Shuttles alone, 15 space walks are planned coupled with seven space walks that are planned by crews from the ISS. In 2001, 18 space walks were conducted — 12 from the shuttle and six from the station.

Columbia will begin the new year with a flight to the Hubble Space Telescope on mission STS-109, the fourth mission to service the space telescope since its launch in 1990.

Five space walks will be conducted during the flight to install an advanced new camera system, attempt to reactivate an existing infrared instrument system, install new solar arrays and install a new power controller. The mission will extend the lifetime and capabilities of the now-famous orbiting telescope.

When Columbia launches it also will become the second Shuttle to fly with a new "glass cockpit," installed as part of maintenance and modifications completed in 2001.

The new cockpit has 11 full-color, flat-panel displays that replace 32 gauges and electromechanical instruments and four cathode-ray tube monitors in the old cockpit. The new cockpit is lighter, uses less power and sets the stage for a future "smart cockpit" that will feature new, more intuitive displays to reduce pilots' workloads during critical periods.

The following flights also are planned in 2002:

STS-110, mid spring: Atlantis will deliver to the ISS the first of three giant truss segments to be launched in 2002.

STS-111, late spring: Endeavour will carry to the ISS the fifth resident crew, the Leonardo logistics module filled with experiments and supplies, and a mobile base system — the second part of the mobile platform for the station's innovative Canadarm2 robotic arm.

STS-107, mid-summer: Columbia will fly an international mission dedicated to microgravity science that will include a Hitchhiker bridge with six paylaods.

STS-112, late summer: Atlantis will make its second visit of the year to the ISS carrying the first starboard side truss segment.

STS-113, early fall: Endeavour will deliver the sixth resident crew and a port side truss segment to the station, completing almost half the length of the final truss.

For more information about upcoming Space Shuttle missions, see: http://spaceflight.nasa.gov/shuttle

PAO Digital Photo

Craig Purdy (left), NASA Suborbital and Special Orbital Projects, and Wayne Woodhams, Virginia Space Flight Authority, talk to Dr. John Campbell, Wallops Senior Manager, following the Director's All Hands on January 18.

Weather Terms

This is the time of year for winter storms and we use radio and television reports to keep updated on the latest weather conditions. During the winter storm season, we should be familiar with winter weather terms such as:

· Freezing rain and freezing drizzle — rain that freezes as it strikes the ground and other surfaces, forming a coating of ice.

· Sleet — small particles of ice usually mixed with rain.

· Snow flurries — periods of snow falling on and off again for short amounts of time accumulation is generally limited.

· Winter storm watch — a possibility of severe winter conditions exists. Expect freezing rain, sleet, or heavy snow, together or separately.

· Winter storm warning — severe winter weather conditions with snowfall of 4 or more inches in a 24-hour period can be expected. Sleet or freezing rain may accompany the snow.

For more weather terms, go to:
http://www.gsfc.nasa.gov/goddardnews/20020118/safe.html

Engineers Week February 18 - 22

Founded in 1951 by the National Society of Professional Engineers, National Engineers Week is celebrated annually by thousands of engineers, engineering students, teachers, and leaders in government and business. In 1990, the National Engineers Week consortium expanded its scope and now includes more than 100 engineering, scientific, and education societies, and major corporations dedicated to increasing public awareness and appreciation of technology and the engineering profession.

Engineers, technicians and scientists are invited to make a difference! Join us for Engineers Week, February 18-22, 2002. For information call Ed Parrott, X1681 or for registration, resources, and assistance review the Engineers Week web-site:
http://education.gsfc.nasa.gov/eweek/engineers/

FedWeek News

Frequent Flier' Benefits to Become Personal Property

Federal employees will be able to keep for their personal use any "frequent flier" and similar travel affinity program benefits they accrue through official travel, under a bill (S-1438) awaiting signature at the White House.

The provision, part of the fiscal 2002 Defense Department authorization bill agreed to by the House and Senate, will apply to civil service, foreign service and military personnel.

Congressional officials said that the change in frequent traveler policy would be retroactive, meaning that employees who have built up such credits in the past would be allowed to convert them to their personal use. However, details of such a transfer will have to be decided through rule making or an administrative decision, possibly by the General Services Administration, which controls travel policy in general.

Also, keeping frequent traveler benefits accrued through official travel could have tax implications; the IRS has indicated that such benefits could be taxable as a benefit. Precisely how that would work and what value would be assigned to such benefits also are yet to be seen.

POV Rate Increase

Effective January 21, the mileage rate for privately owned vehicles (POV) will be 36.5¢ for all travelers when no government vehicle is available or for travelers motoring to and from the airport.

If you have any questions, call Linda Layton, x1526.

Thanks

Personnel from the American Red Cross and the Wallops Health Unit would like to thank those who participated in the Blood Drive held January 14.

Twenty-five employees took part in the drive, and 24 usable units of blood were obtained.

For Sale

1995 Buick Park Avenue, good condition, new tires, 70,000 miles, $8,500 call (757) 787-7290 for details.

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